

Flying for the Common Man

B.R.Pai

Former Director of National Aerospace Laboratories, Bangalore

Mobile: 9342 535 790. Email: paibr@yahoo.com

Introduction

Aerosports makes it possible for the common man to defy gravity and get off the ground. The lure of aero-sports is closely linked with the innate desire of every person to get airborne and fly like birds. The desire to be a pilot and fly an aircraft is a childhood dream for most children but very few in fact get to that and take up aviation as a profession. The scenario has changed over last few decades and participation in aero-sports and hobby flying through various means has become a reality within the grasp of quite a few people: though the number is still small but growing. In India too, the awareness is growing and with improved economic conditions and a significant population of well-to-do youth, the opportunities for taking up aero-sports is promising.

Historically, aero-sports activities started gaining popularity with the development of hang gliders, generally attributed to a NASA scientist, Rogallo in the 1960's. After an evolutionary period, fairly safe designs of hang gliders were developed and enthusiasts could jump off hills and glide around and be airborne for considerable length of time. The next logical step was to attach an engine to a hang glider so that one could take off from level ground and fly around like an aircraft: there was no need to climb up a hill and jump off to get airborne. This became feasible due to availability of light-weight compact engines, initially derived from motorcycles. Thus was born the Powered Hang Glider which developed in the 70's. In this the pilot was seated in a tricycle carrying an engine and a propeller which provided the thrust. The tricycle was suspended underneath a triangular wing similar to a hang glider. The contraption was called a 'trike' and one could take off from a small flat land and the pilot could control the flight by shifting the suspended 'trike' weight by pushing or pulling a control bar. Hence this was called a 'weight-shift microlight aircraft'. Subsequently, microlights constructed with aluminum alloy tubing and covered with 'Dacron' cloth were developed which look like regular aircraft, with covered cockpit and wings with control surfaces viz, ailerons, rudders and elevators. These are called microlight aircraft with 3-axis control. Microlight aircraft of both weight shift type and 3-axis variety have become popular all over the world and are being continually improved. Now they are made and available in India too. Powered hang gliders were introduced to India by Joel Koechlin.

Enthusiasts were keen to find other cheaper and more convenient means of flying than microlight aircraft. This became possible due to the development of ram-air parachutes. The conventional parachute is simply like a large umbrella and descends and moves with the wind, with very little control of the trajectory. In the ram-air parachute, the chute is made of a number of 'cells' which inflate when air flows through them and become semi-rigid and get the shape of an aerofoil or wing. Such a parachute can fly like a wing and can be precisely controlled by the pilot by pulling on various suspension lines. This led to the development of para-glider and the sport of para-gliding. In this a person can jump off a cliff or an aircraft and after an initial period where he falls like a stone (free fall) he can deploy the chute and have a controlled flight and land at precise locations on the ground: a wonderful experience indeed. The natural next step was to attach a light weight engine and propeller so that the para-glider wing could be propelled and the need to jump off a cliff was avoided. Thus was born the

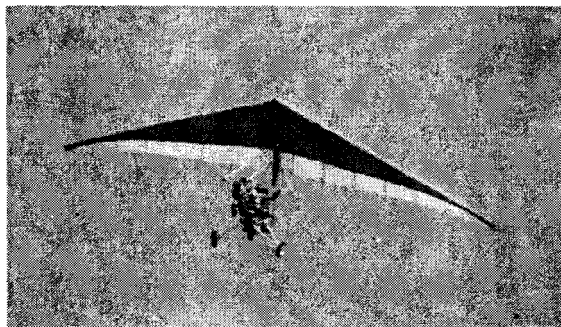
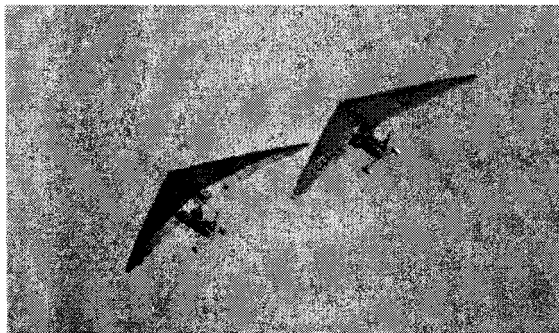
'para-motor'. Again two variants were developed. One is a 'back-pack' where the engine and propeller are strapped on the back of the person. Once the canopy is opened on ground, it is inflated by the propeller slip stream and the person starts running and gets airborne. In the other variant, a 'paraplane', the person or persons sit in a tricycle attached to the parachute or 'canopy'. Thus para-gliding and para-motor have become very popular amongst aero-sports enthusiasts.

Jamborees and Cross Country Flights

With a view to promote awareness of aero-sports, the Aeronautical Society of India, Bangalore Branch set up a "Kites Chapter" in 1995. The Kites Chapter has been organizing a number of events with this purpose, starting with the Kites 95 at the HAL airport. It has organized four Aero-sports Jamborees, in 1998, 2000 and 2002 and 2005. In these events, flying display by amateur flyers as well as professionals was organized for viewing by the public. Effort was made to bring in a variety of microlights, para-sports and other forms of aero-sports. In the 1998 jamboree, a hot air balloon was demonstrated. In the 2000 event, a novel foot-launched powered-hang-glider called the "Mosquito" from UK was demonstrated. In this the pilot launches the hang glider fitted with a small engine by simply running against the wind from level ground. Paragliding, where a person is towed with a winch to a height of about 300 ft and released to perform controlled free flight was fascinating. Para-motor back packs were a novelty at that time and thrilled the spectators with the James Bond like maneuvers. Participation by local firms like Rajhamsa brought out a remarkable fact that India is in fact designing and exporting aero-sports equipment round the world. It is believed that these Jamborees have helped to spread awareness of aero-sports amongst the public, particularly the youth.

The Kites Chapter has also organized a number of short cross country flights on microlight aircraft with a view to give an opportunity to amateur flyers and students. Trips to nearby airfields such as Kolar, Hosur, Mysore and Salem have been organized and have been popular with the flyers. Trips to offbeat, improvised air fields such as in Little England near Hosur and C-Farm near Gundlupet have whetted the appetites of microlite flyers to the true nature of this type of flying, which does not need pukka airfields and away from controlled airspace. As part of National Aerospace Laboratories (NAL) Golden Jubilee celebrations, a unique microlight cross country flight to the West Coast is taking place. About 18 microlight aircraft will fly to Mangalore via Hassan and then proceed for a beach landing at Malpe Beach.

NAL has been promoting microlight and light aircraft for hobby and sports flying since the 80's. It was one of the first to acquire the indigenous powered hang glider 'Altair' based on a Yezdi motorcycle engine developed by Rajhamsa Ultralights Bangalore. It is the belief of NAL's management that such flying activities help the people associated with aviation to improve their skills in the design develop-



ment and maintenance of all aircraft, and also to attract new blood into the industry. NAL pioneered the use of the Wankel Rotary engine in powered hang gliders and has now an indigenous engine development program. Another interesting development is a "Helitrike" which will be a low cost helicopter for hobby and sport flying. The prototype is presently under testing and development..

Opportunities for Participation

Unfortunately, the opportunities available for persons interested to take up aero-sports are rather limited and expensive at present in India. The air-wing of NCC provides air experience and limited training for a large number of cadets for flying in gliders and microlight aircraft. A number of Flying Clubs in the country mainly cater to persons aiming to be licensed pilots and offer courses leading to PPL (Private Pilot Licence) or CPL (Commercial Pilot License) and training is given in certified light aircraft. Private Clubs have come up which give training in flying of microlight aircraft. Typically forty hours of flying are required to obtain a Microlight Flying License (MPL), and may cost around a lakh of rupees. Powered hang Gliders do not need a license, but only authorization from approved instructors. Again the number of authorized instructors is very small. For sports such as para gliding, paramotors, one has to join one of the various private clubs located in various parts of the country. These sports are cheaper than the fixed or flexi-wing variety and are gaining popularity.

Perhaps the way forward to those really serious to take up hobby flying is to join a club or consider joint ownership of microlights. Microlights can cost as little as a car and so is within the realms of possibilities. However, it is serious business, as air is an unforgiving medium and equipment has to be of high quality and should be maintained well and proper training is a must. It is all worth it in the end because the pleasure and thrill of flying on you own is with very few parallels. So go ahead and start with an air experience flight in a microlight, powered hang glider or para-glider and see how it goes! Perhaps the flying bug will bite you.

